

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: 2001256673 A

(43) Date of publication of application: 21.09.01

(51) Int. Cl

**G11B 7/24
B41M 5/26**

(21) Application number: 2001035750

(71) Applicant: FUJI PHOTO FILM CO LTD

(22) Date of filing: 28.06.90

(72) Inventor: USAMI YOSHIHISA
KOBAYASHI TAKASHI

(62) Division of application: 02172465

(54) INFORMATION RECORDING MEDIUM

(57) Abstract:

PROBLEM TO BE SOLVED: To provide a new information recording medium which is an optical disk, having a dye recording layer and which shows little fluctuation in the reflectance in the wavelength region near the oscillation wavelength of a prescribed laser for reproducing.

SOLUTION: The information recording medium has a dye-recording layer, a reflection layer and a protective layer having 50 to 5,000 nm layer thickness formed in this order on a disk substrate. The reflection layer is a thin layer with 0.3 to 30 nm layer thickness, consisting of Ti, Zr, Ta, Cr,

Mo, W, Ni, Rh, Pd, Pt, Cu, Ag, Au, Zn, Al, In, Si, Ge, Te, Sn, Bi, Sb, Tl or Pt and has 10% or higher reflectance for laser beam of a prescribed laser for reproducing to be used. The reflectance characteristics of the recording medium are controlled, in such a manner that when the characteristics are represented by a reflectance curve with the reflectance (%) as the ordinate and the wavelength (nm) as the abscissa, so that the gradient (%/nm) of the tangent of the information recording medium at the oscillation wavelength of the specified laser for reproduction to be used falls with the range of +0.6 to -0.6.

COPYRIGHT: (C)2001,JPO

INFORMATION RECORDING MEDIUM

Patent Number: JP2001256673

Publication date: 2001-09-21

Inventor(s): USAMI YOSHIHISA; KOBAYASHI TAKASHI

Applicant(s): FUJI PHOTO FILM CO LTD

Requested Patent: JP2001256673

Application Number: JP20010035750 19900628

Priority Number(s):

IPC Classification: G11B7/24; B41M5/26

EC Classification:

Equivalents:

Abstract

PROBLEM TO BE SOLVED: To provide a new information recording medium which is an optical disk, having a dye recording layer and which shows little fluctuation in the reflectance in the wavelength region near the oscillation wavelength of a prescribed laser for reproducing.

SOLUTION: The information recording medium has a dye-recording layer, a reflection layer and a protective layer having 50 to 5,000 nm layer thickness formed in this order on a disk substrate. The reflection layer is a thin layer with 0.3 to 30 nm layer thickness, consisting of Ti, Zr, Ta, Cr, Mo, W, Ni, Rh, Pd, Pt, Cu, Ag, Au, Zn, Al, In, Si, Ge, Te, Sn, Bi, Sb, Tl or Pt and has 10% or higher reflectance for laser beam of a prescribed laser for reproducing to be used. The reflectance characteristics of the recording medium are controlled, in such a manner that when the characteristics are represented by a reflectance curve with the reflectance (%) as the ordinate and the wavelength (nm) as the abscissa, so that the gradient (%/nm) of the tangent of the information recording medium at the oscillation wavelength of the specified laser for reproduction to be used falls with the range of +0.6 to -0.6.

Data supplied from the esp@cenet database - I2

(反射率曲線)である。

【符号の説明】

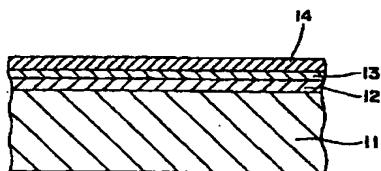
11 基板

12 記録層

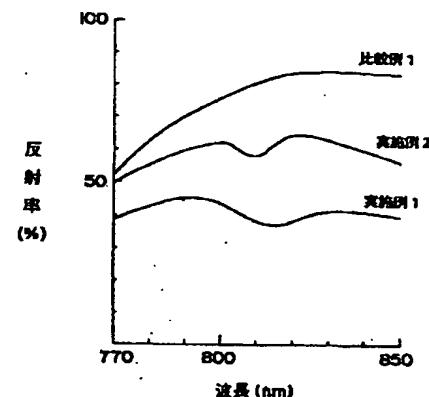
13 反射層

14 保護層

【図1】



【図2】



フロントページの続き

(51) Int.Cl. 7

G 11 B 7/24
B 41 M 5/26

識別記号

538

F I

G 11 B 7/24
B 41 M 5/26

テープコード(参考)

538 F
Y

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

(57) [Claim(s)]

[Claim 1] It has the thin film for information record to which record of a record mark is performed by atomic-arrangement change by irradiation of an energy beam as a record layer. It is the information record medium with which the aforementioned record mark recorded on the record layer is reproduced by energy beam irradiation. With the aforementioned energy beam incidence side of the aforementioned record layer, an opposite side is equipped with the 1st reflecting layer and the 2nd reflecting layer from the side near the aforementioned record layer. the 1st reflecting layer of the above Even if there are little aluminum, Cu, Ag, Au, Pt, and Pd, it makes into a principal component any to be. the sum of atomic % of the content of these atoms above 60 atom % Thickness is 30nm or more 300nm or less. the 2nd reflecting layer of the above The information record medium characterized by being larger than the sum of atom [of aluminum, Cu, Ag, Au, Pt, and Pd / of the content / in / the 1st reflecting layer of the above / it makes into a principal component at least any to be, and / in the sum of atomic % of the content of these atoms] of these atoms / %, and being higher than the thermal conductivity of the 1st reflecting layer of the above.

[Claim 2] The 1st reflecting layer of the above is an information record medium according to claim 1 characterized by containing aluminum below 95 atom % more than 65 atom %.

[Claim 3] The 2nd reflecting layer of the above is an information record medium according to claim 1 characterized by containing aluminum more than 90 atom %.

[Claim 4] The thickness of the 2nd reflecting layer of the above is an information record medium according to claim 1 characterized by 50nm or more being 250nm or less.

[Claim 5] The information record medium according to claim 1 with which the sum of the thickness of the 1st reflecting layer of the above and the 2nd reflecting layer is characterized by 130nm or more being 400nm or less.

[Claim 6] The information record medium according to claim 1 characterized by having a transparent substrate in the aforementioned energy beam incidence side, having two protective layers, the 1st protective layer and an interlayer, between the aforementioned transparent substrate and the 1st reflecting layer of the above, and having the aforementioned record layer between the 1st protective layer and an interlayer.

[Claim 7] The information record medium according to claim 6 with which the thickness of the 1st protective layer of the side near a transparent substrate among the 1st protective layer of the above and an interlayer is 50nm or more 100nm or less, the thickness of the aforementioned record layer is 5nm or more 30nm or less, and the aforementioned interlayer's thickness is characterized by 10nm or more being 40nm or less.

[Claim 8] The information record medium according to claim 1 which makes it a principal component any to be at least, and is characterized by the thing of aluminum, Cu, Ag, Au, Pt, and Pd for which the sum of the content of these atoms has the 3rd larger reflecting layer than the 1st reflecting layer of the above between the 1st reflecting layer of the above, and a record layer.

[Claim 9] The 3rd reflecting layer of the above is an information record medium according to claim 8 characterized by containing aluminum more than 90 atom %.

[Claim 10] It is the information record medium according to claim 8 which the 1st reflecting layer of the above and the 3rd reflecting layer of the above adjoin and exist, and is characterized by the thickness of the 3rd reflecting layer of the above being 30nm or less.

[Claim 11] With the energy beam incidence side of a record layer, an opposite side is equipped with the 1st reflecting layer and the 2nd reflecting layer from the side near the aforementioned record layer. the 1st reflecting layer of the above Even if there are little aluminum, Cu, Ag, Au, Pt, and Pd, it makes into a principal component any to be. the sum of atomic % of the content of these atoms above 60 atom % Thickness is 30nm or more 300nm or less. the 2nd reflecting layer of the above Even if there are little aluminum, Cu, Ag, Au, Pt, and Pd, it makes into a principal component any to be. When the sum of atomic % of the content of these atoms is larger than the sum of atomic % of the content of these atoms in the 1st reflecting layer of the above and irradiates the aforementioned energy beam using an information record medium higher than the thermal conductivity of the 1st reflecting layer of the above The information record method characterized by recording information by forming a record mark by atomic-arrangement change of the aforementioned record layer.